DESGN 320
Title: Three Dimensional Graphics and Design
Units: 3.00
Prerequisite: None.
Advisory: ENGWR 102 or 103, and ENGRD 116 with a grade of "C" or better; OR ESLR 320 and ESLW 320 with a grade of "C" or better.
Hours: 36 hours lecture, 72 hours laboratory
Description: This course is an introduction to the fundamentals of the design process for architecture and engineering. It includes the application of programming, environmental analysis, sustainable (green) considerations, code guidelines and restrictions, market analysis, and economic considerations on design projects. Technical design solutions with freehand perspective graphics, physical mass modeling prototyping, and virtual concept computer modeling are also covered. The course also includes individual and team studio situations, oral presentations, and formal critiques.

Learning Outcomes and Objectives

Upon completion of this course, the student will be able to:

- conceptualize and sketch design ideas in three dimensions by drawing in one-point perspective
- conceptualize and sketch design ideas in three dimensions by drawing in two-point perspective
- sketch and conceptualize design ideas in three dimensions by quick sketching for concept design solutions
- justify design solutions through multiple academic disciplines including, research documentation, 3D graphics, and 2D technical documentation
- apply mass modeling computer software applications to conceptual architectural and engineering design projects
- render presentation graphics by using composition techniques for formal presentation and critique
- render presentation documents by developing an individual drawing and graphic style
- develop virtual computer mass model prototypes based on program requirements for various architectural and engineering assignments, projects, and design problems
- create physical mass models based on defined design programming guidelines
- utilize problem solving and design process methodologies to identify problems, analyze criteria and apply learned principles to synthesize solutions to specific design projects
- apply basic organizational and spatial concepts in the development of architectural and engineering environments
- apply basic sustainable design considerations to prototype models